

### **Claim Listing**

1. Cancelled.
2. Cancelled.
3. Cancelled.
4. Cancelled.
5. Cancelled.
6. Cancelled.
7. Cancelled.
8. Cancelled.
9. Cancelled.
10. Cancelled.
11. Cancelled.
12. New.

## **Full Text Listing of All Claims**

### **Listing of Claims:**

1. (Cancelled) [A highway/railroad crossing detection and warning system comprising:
  - (a) a Doppler radar transmitter and receiver system at a highway/railroad crossing site which detects movement if a train approaches the crossing;
  - (b) a presence detection system at the crossing site which detects a train at the crossing; and
  - (c) warning signal devices at the crossing activated by said Doppler radar transmitter and receiver system or by said presence detection system for providing warning to a motorist approaching the crossing.]
2. (Cancelled) [The detection and warning system set forth in Claim 1 including a solar electrical power generation array and storage battery powering said Doppler radar transmitter and receiver system and said presence detector system.]
3. (Cancelled) [The detection and warning system set forth in Claim 1 wherein the presence detection system operates within a limited area close by the highway/railroad crossing to determine the presence of a train within that area.]

4. (Cancelled) [A highway/railroad crossing detection and warning system comprising:
- (a) a Doppler radar transmitter and receiver system positioned at a highway/railroad crossing and able to detect a moving train at an extended distance from said crossing;
  - (b) a presence detection system also positioned at said highway/railroad crossing and able to detect a train in a close proximity to said crossing;
  - (c) warning signal devices at said crossing activated by said Doppler radar system and by said presence detection system and providing warning to motorists approaching said crossing; and
  - (d) solar panel arrays and storage batteries powering said Doppler radar system, said presence detector system and said warning signal devices.]
5. (Cancelled)[ A highway/railroad crossing detection and warning system comprising:
- (a) a Doppler radar transmitter and receiver warning system at a highway/railroad crossing site which detects movement of a train approaching the crossing, the radar warning system comprising two sets of first and second transmitter/receiver units respectively positioned adjacent a railroad track and located an extended distance from the

crossing with one set on one side of the crossing, the first transmitter/receiver unit of each set directed away from the crossing and the second transmitter/receiver unit of each set directed toward the crossing;

- (b) a presence detection system at the crossing site and comprising present detection units respectively positioned adjacent the railroad track and located a close distance from the crossing;
- (c) warning signal devices at the crossing for warning a motorist at the crossing;
- (d) wireless communications devices transmitting and receiving signals between the radar warning system and presence detection warning system to the warning signal devices to control their activation; and
- (e) solar panel arrays and storage batteries powering all of said systems and warning signal devices.]

6. (Cancelled)[A highway/railroad crossing detection and warning system comprising:

- (a) a Doppler radar transmitter and receiver warning system at a highway/railroad crossing site which detects movement of a train approaching the crossing, the radar warning system comprising two sets of first and second transmitter/receiver units respectively positioned adjacent a

railroad track and located an extended distance from the crossing, with one set on one side of the crossing and the other set on another side of the crossing, the first transmitter/receiver unit of each set directed away from the crossing and the second transmitter/receiver unit of each set directed toward the crossing; and

- (b) warning devices responsive to signals from said Doppler radar transmitter and receiver warning system.]

7. (Cancelled) [A highway/railroad crossing detection and warning system comprising:

- (a) a set of Doppler radar transmitter and receiver motion detectors detecting movement of a train toward and away from a crossing site;
- (b) warning signal devices at the crossing site, the motion detector communicating with the warning signal devices to activate them and warn approaching motorists when a train approaches the crossing site and deactivate them when a train departs the crossing site; and
- (c) a presence detector at the crossing site detecting a train obstructing the crossing, the presence detector communicating with the warning signal devices to prevent deactivation of the warning signal devices when a train blocks the crossing site.]

8. (Cancelled) [The system set forth in Claim 7 including solar electrical panels powering at least said movement detection units.]
9. (Cancelled) [The system set forth in Claim 8 including solar electrical panels powering the entire system.]
10. (Cancelled) [A highway/railroad crossing detection and warning system comprising:
  - (a) a radar transmitter and receiver motion detection unit positioned remotely from a crossing site and able to sense a train traveling from the motion detection unit to the crossing site;
  - (b) warning signal devices at the crossing site to warn motorists of an approaching train;
  - (c) a wireless transmission logic device controlling of a warning activation to the warning signal devices; and
  - (d) a presence detection unit located adjacent the crossing site and able to detect the presence of a train stopped on the tracks and deactivate the warning signal devices.]
11. (Cancelled) [A highway/railroad crossing detection and warning system comprising:
  - (a) a set of Doppler radar transmitter and receiver movement detection units, each movement detection unit located a distance from a highway/railroad crossing site in opposite directions of travel;
  - (b) warning signal devices at the crossing site for warning a motorist approaching the crossing site;

- (c) wireless communication and logic device acting between the movement detection units and the warning signal devices to activate when a respective said movement detection senses a train moving from the position of the movement detection unit toward the crossing site; and
- (d) a set of presence detection units located on opposite sides adjacent the crossing site, each presence detection unit sensing the stationary presence of a train adjacent thereto said presence detection units interacting with system logic deactivate the warning signal device if a train previously detected by a movement detection unit stops prior to the crossing site and within sensory range of said presence detection unit.]

12. (New) A highway/railroad crossing detection and warning system comprising:

- (a) Doppler radar transmitter and receiver motion detectors detecting movement of rail traffic toward and away from a crossing site, said motion detectors extending upwardly above a ground surface and positioned separate from and adjacent to a railroad track and characterized by the absence of operational attachment to either rails, cross ties or roadbed of said railroad track;
- (b) warning signal devices at the crossing site, the motion detectors communicating with the warning signal devices to activate them and warn

persons of rail traffic approaching the crossing site, and deactivate them  
when said rail traffic departs the crossing site; and

(c) a presence detector extending upwardly above a ground surface

and positioned separate from and adjacent to a railroad track and

characterized by the absence of operational attachment to either rails,

cross ties or roadbed of said railroad track, the presence detector detecting

rail traffic obstructing the crossing, the presence detector communicating

with the warning signal devices to prevent deactivation of the warning

signal devices when rail traffic stops and occupies the crossing site.